

CLAIMS

What is claimed is:

1. A polymeric composition comprising aromatic monomeric units selected from fluorene, spirofluorene, and bridged biphenyl, wherein the
5 polymeric composition has at least a first substituent and a second substituent, wherein the first substituent is different from the second substituent and both substituents are independently selected from alkyl, heteroalkyl, alkenyl, heteroalkenyl, alkynyl, heteroalkynyl, aryl, heteroaryl, arylalkyl, and heteroarylalkyl.
- 10 2. The polymeric composition of Claim 1, wherein the first substituent and the second substituent are on the same monomeric unit.
3. The polymeric composition of Claim 1, wherein the first substituent and the second substituent are on different monomeric units.
4. The polymeric composition of Claim 1, wherein the first
15 substituent and the second substituent are independently selected from alkyl groups having 1-20 carbons.
5. The polymeric composition of Claim 1, wherein the molar ratio of the monomeric units having the first alkyl substituent to monomeric units having the second alkyl substituent is in the range of 1:100 to 1:10.
- 20 6. The polymeric composition of Claim 8, wherein the molar ratio is in the range of 1:10 to 10:1.
7. The polymeric composition of Claim 1 wherein the aromatic monomeric unit is fluorene.
8. The polymeric composition of Claim 5 wherein the first
25 substituent and second substituent are in the 9-position.
9. The polymeric composition of Claim 6, wherein the alkyl moieties are selected from C₁ to about C₂₀ linear alkyl moieties, C₁ to about C₂₀ cyclic alkyl moieties, and C₁ to about C₂₀ branched chain alkyl moieties.
- 30 10. The polymeric composition of Claim 7, wherein the alkyl moieties are selected from C₄ to about C₁₂ linear alkyl moieties, C₄ to about C₁₂ cyclic alkyl moieties, and C₄ to about C₁₂ branched chain alkyl moieties.
11. An organic light emitting diode (OLED) comprising an active
35 layer comprising the polymeric composition of Claim 1.
12. An electroluminescent device comprising an active layer comprising the polymeric composition of Claim 1.

13. A method for improving the efficiency of an electroluminescent device, comprising incorporating into the active layer of the device a polymeric composition comprising aromatic monomeric units selected from fluorene, spirofluorene, and bridged biphenyl, wherein the polymeric composition has at least a first substituent and a second substituent, wherein the first substituent is different from the second substituent and both substituents are independently selected from alkyl, heteroalkyl, alkenyl, heteroalkenyl, alkynyl, heteroalkynyl, aryl, heteroaryl, arylalkyl, and heteroarylalkyl.
14. A method for forming a polymeric composition comprising providing a plurality of aromatic monomers selected from fluorene, spirofluorene and bridged biphenyl;
treating the monomers with at least two reagents capable of adding substituents to the monomers, said substituents being independently selected from alkyl, heteroalkyl, alkenyl, heteroalkenyl, alkynyl, heteroalkynyl, aryl, heteroaryl, arylalkyl, and heteroarylalkyl, to form a mixture of randomly substituted monomers;
polymerizing said mixture of randomly substituted monomers to form a polymer.
15. A polymeric composition comprising aromatic monomeric units selected from fluorene, spirofluorene, and bridged biphenyl, wherein the polymeric composition has at least a first substituent and a second substituent, wherein the first substituent is different from the second substituent and both substituents are independently selected from alkyl, heteroalkyl, alkenyl, heteroalkenyl, alkynyl, heteroalkynyl, aryl, heteroaryl, arylalkyl, and heteroarylalkyl.
16. A method for improving the efficiency of an electroluminescent device, comprising incorporating into the active layer of the device a polymeric composition comprising aromatic monomeric units selected from fluorene, spirofluorene, and bridged biphenyl, wherein the polymeric composition has at least a first substituent and a second substituent, wherein the first substituent is different from the second substituent and both substituents are independently selected from alkyl, heteroalkyl, alkenyl, heteroalkenyl, alkynyl, heteroalkynyl, aryl, heteroaryl, arylalkyl, and heteroarylalkyl.
17. A method for forming a polymeric composition comprising providing a plurality of aromatic monomers selected from fluorene, spirofluorene and bridged biphenyl;

- treating the monomers with at least two reagents capable of adding substituents to the monomers, said substituents being independently selected from alkyl, heteroalkyl, alkenyl, heteroalkenyl, alkynyl, heteroalkynyl, aryl, heteroaryl, arylalkyl, and heteroarylalkyl, to
- 5 form a mixture of randomly substituted monomers;
- polymerizing said mixture of randomly substituted monomers to form a polymer.